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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,322	07/18/2003	Jen-Cheng Lai	LEE0014-US	2548

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EXAMINER	
VU, PHU	

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/621,322	LAI ET AL.	
	Examiner	Art Unit	
	Phu Vu	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the concavities and convexities found in claims 3 and 8 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (AARP) in view of Yuuki US 6219116.

Regarding claim 1, applicant shows a prior art teaching of a liquid crystal display apparatus for use with a portable electronic apparatus, said LCD apparatus including a LCD module and back light module (fig. 1 element 114), said portable electronic apparatus including a printed circuit board, and a backlight comprising: a back light plate (110) disposed under the LCD and a light source (114) disposed on the liquid crystal PCD for generating light and a plurality of holes allowing passage of light generated by the light source (unreferenced part but found on element 110 which correspond to element 114 when stacked see figure 1). AARP fails to teach the housing having a depression with the LCD module disposed within the depression and the back light plate and housing are formed in integral with the housing disposed under a depression in the housing. Yuuki teaches a backlight plate (fig. 5 element 11) formed in integral with a housing (9a and 9b) and under a depression in the housing to prevent accumulation of dust by providing a light guide plate with no gaps (see column 5 lines 32-45). Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to combine a housing having a depression with the LCD module disposed within the depression and the back light plate and housing are formed in

integral with the housing disposed under a depression in the housing with AAPR to reduce dust accumulation.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Yuuki and further in view of Koike US 6172809.

Regarding claim 2, AAPA discloses a LCD module disposed on a second surface of the light plate (see fig. 8 element 108). AAPA and Yuuki disclose all the limitations of claim 2 except the light reflecting film disposed on a first surface the light guide. Koike discloses a reflection film (see fig. 5 element 5) formed at the bottom surface of a light guide to return light emitted from the bottom surface of the light guide back through the light guide see (column 11 lines 1-5). This improves lighting efficiency as light heading towards the bottom surface is not wasted. Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to place a reflective film at the bottom surface to return light emitted from the bottom surface of the light guide back through the light guide to improve lighting efficiency.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Yuuki and further in view of Natsuyama US 2002/0008806.

Regarding claim 3, AAPA and Yuuki disclose all the limitations of claim 3 except a backlight plate including a plurality of concave and convex surfaces. Natsuyama teaches a back light plate with concave and convex surfaces to adjust light emitted from the light guide plate by changing the reflection angle of the light (see [0033]) and reduce thermal expansion in the light guide ([0025]). Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to form concavities and

convexities in a light guide plate to modify the light emitted and change the reflection angle of the light and also reduce thermal expansion in the light guide.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Yuuki and further in view of Tiao US 6318863.

Regarding claims 4 and 5, AAPA and Yuuki disclose all the limitations of claims 4 and 5 except an LED or cold cathode light source. Tiao discloses cold cathode and LEDs as low power light sources (column 3 lines 25-30). Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to use an LED or cold cathode because they consume little power.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Yuuki and further in view of Koike.

Regarding claim 6, applicant shows a prior art teaching of an LCD display comprising an upper housing; a back light plate disposed under the upper housing (fig. 3 110) disposed under the housing with a first and second surface, a printed circuit board disposed under the backlight plate (112), an LCD module disposed on a second surface of the light guide plate (108), a light source (fig. 1 114) disposed on the PCB for generating light, a cover panel (fig. 3 102) disposed over said LCD module and a plurality of holes allowing passage of light generated by the light source (unreferenced part but found on element 110 which correspond to element 114 when stacked see figure 1). AARP fails to teach the housing having a depression with the LCD module disposed within the depression and the back light plate and housing are formed in

integral with the housing disposed under a depression in the housing and a light-reflecting film disposed between the backlight plate and PCB.

Yuuki teaches a backlight plate (fig. 5 element 11) formed in integral with a housing (9a and 9b) and under a depression in the housing to prevent accumulation of dust by providing a light guide plate with no gaps (see column 5 lines 32-45). Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to combine a housing having a depression with the LCD module disposed within the depression and the back light plate and housing are formed in integral with the housing disposed under a depression in the housing with AAPR to reduce dust accumulation.

Koike discloses a reflection film (see fig. 5 element 5) formed at the bottom surface of a light guide to return light emitted from the bottom surface of the light guide back through the light guide see (column 11 lines 1-5). This improves lighting efficiency as light heading towards the bottom surface is not wasted. Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to place a reflective film at the bottom surface to return light emitted from the bottom surface of the light guide back through the light guide to improve lighting efficiency.

Regarding claim 7, AAPA discloses a foam polymer between the LCD module (see fig. 3 element 106). The limitation "to prevent dust from cumulating on said LCD module" does not appear to impose any structural limitations as per applicant's specification. Therefore, merely providing a foam polymer disposed between the cover panel and LCD module is considered to prevent dust from cumulating as applicant does

not disclose how this foam polymer prevents dust other than placing it in the specified location.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Yuuki and further in view Koike and further in view of Natsuyama.

Regarding claim 8, AAPA and Yuuki disclose all the limitations of claim 3 except a backlight plate including a plurality of concave and convex surfaces. Natsuyama teaches a back light plate with concave and convex surfaces to adjust light emitted from the light guide plate by changing the reflection angle of the light (see [0033]) and reduce thermal expansion in the light guide ([0025]). Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to form concavities and convexities in a light guide plate to modify the light emitted and change the reflection angle of the light and also reduce thermal expansion in the light guide.

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Yuuki and further in view of Koike and further in view of Tiao US 6318863.

Regarding claims 9 and 10, AAPA and Yuuki disclose all the limitations of claims 4 and 5 except an LED or cold cathode light source. Tiao discloses cold cathode and LEDs as low power light sources (column 3 lines 25-30). Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to use an LED or cold cathode because they consume little power.

Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Yuuki and further in view of Koike and further in view of Larson US 6392727.

Regarding claims 11-13, Yuuki and Koike disclose all the limitations of claims 11-13 except the cover being a transparent cover of glass or plastic material. Larson teaches a glass or plastic transparent cover to protect underlying components of an LCD and transmit light from the backlight passing through the other components (see column 2 lines 35-50). Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to use a transparent cover of glass or plastic to protect underlying components of an LCD and transmit light from the backlight passing through the other components.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phu Vu whose telephone number is (571)-272-1562. The examiner can normally be reached on 8AM-5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571)-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Phu Vu
Examiner
AU 2871

DUNG T. NGUYEN
PRIMARY EXAMINER